APPENDIX G8

AESTHETICS

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This appendix addresses the comparative impacts of the alternatives on aesthetics or visual resources. Aesthetic impacts are evaluated through an examination of the alternative's effects on the visual character of a site (or area) and related viewsheds. Visual character is comprised of a combination of elements, including land use, architecture, design, and building height and/or mass. The visual character of a project site is typically evaluated both to the exclusivity of surrounding land uses and within the context of its neighborhood. It is recognized, however, that issues relating to visual character and the degree of associated environmental impacts are inherently subjective due to the wide range of possible opinions regarding aesthetic values and qualities.

The scope of the aesthetic impact analysis is confined to the physical effects on viewsheds and on physical attributes of landscape features that define important views. Related effects on ambient noise and air quality (including odors) are examined in other appendices.

G8.1 RELEVANT REGULATIONS

Outside of Federal land administered by the U.S. Forest Service and National Park Service, few regulations concern aesthetic resources. Since the areas for the action alternatives fall outside of these lands, applicable regulations are limited to those at the State and local level.

At the State level, the California Scenic Highway Program has the goal of preserving and enhancing the natural beauty of California. Highways designated as scenic offer passing motorists pristine views of natural landscapes devoid of visual intrusions (e.g., buildings, unsightly land uses, noise barriers). The California Scenic Highway Program designates travel routes that are to receive some level of protection for the scenic resources visible from them.

Local policies articulating visual resource management objectives are typically contained in the General Plans/Comprehensive Plans and Elements adopted by each county and incorporated city in California.

G8.2 GENERAL ENVIRONMENTAL SETTING

The San Luis Drain Feature Re-evaluation alternatives cut across a wide swath of central California, an area that includes a diversity of landscape and visual resources. With the exception of the northwestern section of the two Delta Disposal Alternatives, however, virtually all of the area that would be directly affected by the alternatives is characterized by a relatively low population density. Most of the land that would be subject to disturbance with implementation of each alternative is currently either in agricultural or open space uses. The major exception is along the northwestern segment of the two Delta Disposal Alternatives, which is characterized by heavy industrial, commercial, and some urban residential land uses. For the impact evaluation under the National Environmental Policy Act, the baseline will be the visual setting that would be expected to exist under the No Action Alternative.

The primary features associated with the action alternatives that would be expected to produce potential visual impacts include the pipelines, tunnels, open canals, pumping stations, outfalls, evaporation ponds, reuse facilities (including reverse osmosis [RO] and/or selenium treatment plants), and regulating reservoirs. For several of these features, impacts would be expected only during the construction phase as the facilities would be located below the ground surface. For

others, impacts would be expected both during the construction phase (temporary) and operation phase (permanent).

Issues that will need to be addressed in the Environmental Impact Statement pertaining to aesthetic impacts are described in the next section for each of the four action alternatives as well as the No Action Alternative.

G8.3 ENVIRONMENTAL CONSEQUENCES

This section outlines the major issues associated with each of the alternatives as they pertain to the aesthetic impact analysis. A preliminary evaluation of the potential for significant, permanent adverse impacts is provided for each alternative. Where applicable, assumptions made regarding construction method, post-construction site restoration, and the effects of potentially required mitigation actions on visual resources are clearly stated.

G8.3.1 Key Impact and Evaluation Issues

Visual impacts are also analyzed through an examination of views and/or viewsheds. Viewshed impacts are typically characterized by the loss and/or obstruction of scenic vistas or other major views available to the public. View analysis is also based upon the relative visibility of the project feature with regard to viewing location and existing and future development on the site. Impacts considered to be significant typically consist of the loss or obstruction of views to the horizon or scenic vistas. Significant impacts can also include changes in the character of the viewshed, such as the elimination of natural features, changes to the style or ambience of the community, or the insertion of a prominent feature that challenges the original aesthetic values of the site.

Impacts of the disposal alternatives on aesthetics will be examined by (1) comparing the existing visual character of the landscape and the degree to which actions that are associated with each of the alternatives would affect (either contrast or conform with) this character and (2) analyzing changes in the aesthetic experience offered to the public, such as whether a given action would result in a visible change, the duration of any change in the visual character, the distance and viewing conditions under which the change would be visible, and the number of viewers that would be affected.

The *intensity* of the impact can be classified as negligible, minor, moderate, or major. The intensity of the impact is comprised of both the extent and duration of the physical effect. A negligible impact would be barely perceptible and confined to a limited viewpoint. A minor impact would result in little change to the existing landscape character and minor or temporary effects on viewers. A moderate impact would be noticeable to viewers from one or more scenic viewpoints. A major impact would cause a substantial change in landscape character or a permanent change to existing viewpoints. Impact duration can be either short-term (temporary) or long-term (permanent). Though most aesthetics impacts are considered to be negative, some can be positive in that the implementation of a specific feature of an alternative will result in an improvement to existing visual character or specific views.

G8.3.2 No Action Alternative

Under this alternative, no drainage conveyance facilities would be constructed, nor would regional drainwater treatment facilities be developed. Thus, visual impacts would be limited to changes in existing patterns of land use within the San Luis Unit. More than 78,000 acres are expected to be retired from active agricultural production under this alternative. Given the assumed salt buildup in the soil of these areas, it is assumed that this land would simply convert to unmanaged open space. This change in land use could produce some visual impact, particularly if the retired acres are located in contiguous tracts. This impact would be potentially moderate and permanent.

G8.3.3 Ocean Disposal Alternative

Under this alternative, potential aesthetic impacts would extend from the San Luis Unit south and west from San Joaquin Valley through the Coast Ranges to Estero Bay at the Pacific Ocean. Areas potentially impacted would include portions of Kings, Fresno, Merced, Kern, and San Luis Obispo counties. Drainage service would be provided to each of the four subareas: Westlands North, Westlands Central, Westlands South, and Northerly Area. Facilities installed under this alternative would include a drainage collection system within each subarea, agricultural reuse facilities within each subarea, a conveyance system for collecting reused drainwater from each subarea and delivering it to the pipeline, and a system of buried pipelines and tunnels to deliver drainwater from the San Luis Unit to Estero Bay.

The visual character of the areas that would contain these facilities varies greatly along the route of the system. The northern segment of the system, in and around the San Luis Unit, is largely defined by the dominating presence of large agricultural operations and open cropland. Moving to the south, the dominance of irrigated agriculture lessens and the land is largely in undeveloped open space used for ranching, grazing, and oil/gas production. Kettleman Hills, Temblor Range, and Santa Lucia Range form the major topographic barriers comprising the Coast Ranges along the system route. Elevations reach as high as 3,000 to 4,000 feet in the vicinity of the route, offering the potential for expansive vistas of the construction zone at various points along the route. The Coast Ranges are largely open space with ranching, grazing, and some vineyard land use dominating. Closer to the ocean, the mountains are more heavily forested (oak woodland). A few small settlements are located along the potential route (Firebaugh, Mendota, Kettleman City, Cholame, Shandon, and Cayucos). The larger urban center of Paso Robles is located approximately 5 miles north of the route. Population density along the entire route is low, with the exception of the aforementioned communities. Some residences in these communities could experience some degree of visual impact during both project construction and operation.

Aesthetic impacts anticipated to be associated with each of the major components of this alternative are as follows:

- Impacts caused by installation of the drainage collection system are expected to be negligible and temporary during construction only. These systems will be composed of subsurface tile drains and, following installation, will not be visible above the ground surface.
- Impacts of the four agricultural reuse facilities will be minor but permanent. These facilities will each be comprised of several acres (totaling 27,200 acres) of farmland underlain by the system of tile drains delivering drainage from upland fields. Above ground level, these

facilities will consist of cropland planted with salt-tolerant crops. Other than a potential permanent change in the type of crop planted on these acres, no changes to the visual character of these sites are anticipated.

- Impacts associated with installation of the drainwater conveyance system connecting the four reuse facilities with the potential Kettleman City pipeline are likely to be moderate and permanent. Four pumping plants (one adjacent to each reuse facility), each covering approximately 2 acres, will be constructed to convey drainwater from the reuse facilities upgradient to the Kettleman City pipeline. A network of buried 42-inch PVC pipelines would be installed to convey drainwater from the pumping plants to the Kettleman City pipeline. Impacts associated with the pipeline network would be temporary during construction only. The four pumping plants, however, may be visible from surrounding residences and local roads and, depending on their height and bulk, may alter the overall visual character of each location somewhat. Their impact is expected to be moderate only because other industrial facilities are likely associated with existing agriculture already located within the general vicinity of each site.
- Impacts associated with installation of the Kettleman City pipeline to convey drainwater from the San Luis Unit over the Kettleman Hills and across Kettleman Plain to the Temblor Range are anticipated to be moderate and permanent. This 46-mile-long facility would include the construction of five pumping plants and would be located in an area of open cropland, grazing land, and foothills. Impacts associated with the buried pipeline would be temporary during the construction phase only. However, the five pumping plants may be visible from surrounding residences and local or State highways and, depending on their height and bulk, may alter the overall visual character of each location somewhat. Their impact is expected to be moderate only because of their relatively small size and distance from viewing corridors. However, the two plants to be located in Cottonwood Canyon along State Highway 41 may potentially have a greater impact due to the undeveloped nature of the surrounding area and their proximity to the highway corridor.
- Bluestone Tunnel will connect the western end of the Kettleman City pipeline with the eastern end of the Paso Robles pipeline and will pass under Bluestone Ridge in the Temblor Range at an elevation of 1,850 feet. The eastern portal of this 1.23-mile-long tunnel may be visible from State Highway 41, while the western portal will likely be concealed from regional vantage points. Impacts associated with this facility are expected to be minor and permanent.
- Impacts associated with installation of the Paso Robles pipeline to convey drainwater from Bluestone Tunnel through Cholame Valley to the Santa Lucia Range are anticipated to be moderate and permanent. This 43-mile-long facility would include the construction of one pumping plant and would be located in an area of open cropland, grazing land, and vineyards with some rural residential development. Impacts associated with the buried pipeline would be temporary during the construction phase only. However, the pumping plant may be visible from State Highway 46 and, depending on its height and bulk, may alter the overall visual character of the location due to the undeveloped nature of the surrounding area and its proximity to the highway corridor. The potential for visual impacts at the Salinas River crossing south of Paso Robles will also need to be fully evaluated.

- Two tunnels, Santa Rita and Santa Lucia tunnels, will convey the drainwater through the Santa Lucia Range at an approximate elevation of 1,300 feet. A 1.11-mile-long siphon would connect these two tunnels. Both portals of Santa Rita Tunnel may be visible from State Highway 46. Santa Lucia Tunnel would be concealed from regional vantage points. Impacts associated with these facilities would be expected to be minor and permanent.
- Impacts associated with the 11.35-mile-long buried Cottontail pipeline conveying drainwater from Santa Lucia Tunnel to Estero Bay at the Pacific Ocean would be moderate and temporary during construction only.
- Impacts associated with the Point Estero outfall would be moderate and temporary. Construction of this pipe (including a 1.44-mile-long underwater segment leading to the outfall) would temporarily alter the existing visual character of the construction zone but would not result in any permanent change to aesthetic resources.

This alternative would be generally consistent with the overall visual character of the San Luis Unit and adjacent areas in San Joaquin Valley but may visually conflict with some open space land uses in the trans-Coast Ranges portion of the route. Nonetheless, permanent impacts would be generated at only a few specific locations. The construction period is estimated at about 7 years, though individual facilities causing temporary visual impacts would be built over a shorter time frame (varies by facility). Except in wooded areas intersecting the pipeline corridor, pipeline damage would be restored to preconstruction conditions and visual impacts would be temporary. In wooded areas, trees removed during construction would not be replanted.

The potential visual impacts generated by implementation of this alternative will need to be evaluated against the visual element of the general plans for Merced, Fresno, Kings, Kern, and San Luis Obispo counties and the cities of Firebaugh, Mendota, Kettleman City, and Paso Robles. Designated California Scenic Highways within the general vicinity of the San Luis Unit include Interstate 5, which is located between 8 and 10 miles west of the facility locations; State Highway 152, which passes within 10 miles north of the Northerly Area reuse facility location; and State Highway 1, which crosses the Cottontail pipeline portion of the route north of Cayucos. Given the relatively flat topography of the area along State Highway 152 and the distance of project facilities from this corridor, visual impacts to motorists along this route will likely be nonexistent. Potential visual impacts to motorists along Interstate 5 and State Highway 1 will need to be evaluated as segments of these highways are located at higher elevations along the eastern side of the Kettleman Hills and the western foothills of the Santa Lucia Range, respectively. It is possible that some project features may be visible from parts of each route.

G8.3.4 Delta-Chipps Island Disposal Alternative

Under this alternative, potential aesthetic impacts would occur from the San Luis Unit north and west down San Joaquin Valley and into the vicinity of the Delta. Areas potentially impacted would include portions of Kings, Fresno, Merced, Stanislaus, San Joaquin, Alameda, and Contra Costa counties. Drainage service would be provided to each of the four subareas: Westlands North, Westlands Central, Westlands South, and Northerly Area. Facilities installed under this alternative would include a drainage collection system within each subarea, agricultural reuse facilities within each subarea, a conveyance system for collecting reused drainwater from each subarea and delivering it to a reuse facilities collector point adjacent to the Northerly Area, a

buried pipeline or open canal to deliver drainwater from the collector point to the southern end of the existing San Luis Drain, and a pipeline and/or open canal system to deliver drainwater from the northern end of the San Luis Drain to the Delta.

The visual character of the areas that would contain these facilities is largely defined by the dominating presence of large agricultural operations and open cropland, particularly in the San Joaquin Valley portion of the system. The northwestern quarter of the route contains significant urban and industrial development, particularly around Tracy, Brentwood, and Antioch. The topographic gradient in the San Joaquin Valley portion of the system is virtually flat, offering little opportunity for expansive public viewpoints. West of Tracy, however, the system's route would lie adjacent to the eastern edge of the Diablo Range and could be visible from elevated vantage points in the mountains from this area north and west to Antioch. Population density in the San Joaquin Valley portion of the route is low, with the exception of the area around Tracy. The small communities of Firebaugh, Mendota, Los Banos, and Westley are located in proximity to some of the project facilities in San Joaquin Valley. As a result, some residences in these towns could experience some degree of visual impact during both project construction and operation. The system would pass to the south and west of the growing Tracy area and would go directly through Byron, Brentwood, Antioch, and Pittsburg. Residents in each of these urban areas could experience some degree of visual impact during both project construction and operation.

Aesthetic impacts anticipated to be associated with each of the major components of this alternative are as follows:

- Impacts caused by installation of the drainage collection system are expected to be negligible and temporary during construction only. These systems will be composed of subsurface tile drains and, following installation, will not be visible above the ground surface.
- Impacts of the four agricultural reuse facilities will be minor and permanent. These facilities will each be comprised of large acreages (totaling 27,200 acres) of farmland underlain by the system of tile drains delivering drainage from upland fields. Above ground level, these facilities will consist of cropland planted with salt-tolerant crops. Other than a potential permanent change in the type of crop planted on these acres, no changes to the visual character of these sites are anticipated.
- A 160-acre complex of biological reactors for selenium treatment would be installed at the collector point. Impacts associated with this facility would be permanent as it would be visible from ground-level vantage points surrounding the site. The treatment reactors may also be visible from nearby residences and local farm roads and, depending on their height and bulk, may alter the overall visual character of each location somewhat. Their impact is expected to be moderate only because other industrial facilities are likely associated with existing agriculture located within the general vicinity of each site.
- Impacts associated with installation of the pipeline/canal system connecting the reuse facilities collector point with the existing San Luis Drain are anticipated to be minor and either temporary (if a pipeline is used) or permanent (if an open canal is selected). This facility would be of a short length (approximately 2.1 miles) and would be located in an area of open cropland. As other open canals exist in the vicinity, neither option (pipeline or canal) would be expected to alter the existing visual character of the locale.

- Impacts associated with the use of the existing San Luis Drain to convey the collected drainwater north to Salt Slough in Kesterson National Wildlife Refuge (northern end of existing drain) would be expected to be negligible and permanent. Other than a change in the quantity of water in the drain at different times of the year, no visual impacts would be expected.
- The conveyance system from the northern end of the San Luis Drain to the discharge point in Pittsburg would either be comprised of a combination of buried pipeline and open canals or comprised entirely of buried pipelines. Visual impacts associated with this portion of the system are expected to be moderate and permanent. The portions of the route that could consist of open canals are generally in sparsely populated areas of agricultural or open space land west of the San Joaquin River in Stanislaus and southern San Joaquin counties. Another potential canal segment is in a marginally more densely populated area of eastern Contra Costa and Alameda counties and western San Joaquin County (from Brentwood to Bethany). As other open canals exist in these areas, selection of the canal option would not be expected to alter the existing visual character of the locale. However, views from some residences along the route could be impacted. If the pipeline option is chosen, impacts would be temporary during construction only. In addition to the linear facilities, two pumping plants would be constructed (one east of Interstate 5 north of Vernalis and another at Brentwood). These plants may be visible from surrounding residences and local roads and, depending on their height and bulk, may alter the overall visual character of each location somewhat. Their impact is expected to be moderate only because other industrial facilities are likely associated with existing agriculture already located within the general vicinity of each site.
- Impacts associated with the discharge pipe at Chipps Island in the Delta (at Pittsburg) would be moderate and temporary. Construction of this pipe (including an 1.0-mile-long underwater segment leading to the outfall) would temporarily alter the existing visual character of the construction zone but would not result in any permanent aesthetic change.

This alternative would be generally consistent with the overall visual character of the San Luis Unit and adjacent areas in San Joaquin Valley but may visually conflict with some urban land uses in the Tracy, Brentwood, Antioch, and Pittsburg areas. Nonetheless, permanent impacts would be generated at only a few specific locations (will vary depending on amount of open canal involved). The construction period is estimated at about 5 years, though individual facilities causing temporary visual impacts would be built over a shorter time frame (varies by facility).

The potential visual impacts generated by implementation of this alternative will need to be evaluated against the visual element of the general plans for Merced, Fresno, Kings, Stanislaus, San Joaquin, Alameda, and Contra Costa counties and the cities of Firebaugh, Mendota, Tracy, Brentwood, Antioch, and Pittsburg. Designated California Scenic Highways within the general vicinity of the San Luis Unit include Interstate 5, which is located between 8 and 10 miles west of the facility locations; State Highway 152, which passes within 10 miles north of the Northerly Area reuse facility location; and Interstate 580, which is located between 1 and 3 miles west of the pipeline location. Given the relatively flat topography of the area along State Highway 152 and the distance of project facilities from this corridor, visual impacts to motorists along this route will likely be nonexistent. Potential visual impacts to motorists along Interstates 5 and 580 will need to be evaluated as segments of these highways are located at higher elevations along

the eastern foothills of the Diablo Range. It is possible that some project features may be visible from parts of each route.

G8.3.5 Delta-Carquinez Strait Disposal Alternative

This alternative is the same as the Chipps Island outfall with the exception that the buried pipeline would extend west from Pittsburg to Crockett along Suisun Bay and an outfall in Carquinez Strait would be constructed.

Impacts associated with this alternative would be the same as those associated with the Delta – Chipps Island Disposal Alternative except that moderate and temporary impacts associated with installation of the pipeline segment from Pittsburg to Crockett would occur. Though most of the area along this route is currently industrial and/or commercial, views from some residences in Martinez and Crockett could be impacted during construction. Similarly, views from East Bay Regional Park District lands along the Carquinez Strait could be affected during pipeline and outfall construction.

An additional year of construction time is currently anticipated for this alternative (compared to the Chipps Island discharge), and no other designated scenic highways would be involved.

G8.3.6 In-Valley Disposal Alternative

Under this alternative, aesthetic impacts of the project would be limited to the San Luis Unit in Merced, Fresno, and Kings counties. Drainage service would be provided to each of the four subareas: Westlands North, Westlands Central, Westlands South, and Northerly Area. Facilities installed under this alternative would include a drainage collection system within each subarea, agricultural reuse facilities within each subarea, an RO plant adjacent to the reuse facility in the Northerly Area, a conveyance system for collecting reused drainwater from each subarea, and two regional treatment and disposal facilities. In addition, two mitigation wetland complexes would be developed.

The visual character of the areas that would contain these facilities is largely defined by the dominating presence of large agricultural operations and open cropland. The topographic gradient in these areas is virtually flat, offering little opportunity for expansive public viewpoints. Population density in this portion of San Joaquin Valley west of the Fresno Slough and San Joaquin River is very low. The small communities of Firebaugh and Mendota are located in proximity to some of the project facilities. As a result, some residences in these towns could experience some degree of visual impact during both project construction and operation.

Aesthetic impacts anticipated to be associated with each of the major components of this alternative are as follows:

- Impacts caused by installation of the drainage collection system are expected to be negligible and temporary during construction only. These systems will be composed of subsurface tile drains and, following installation, will not be visible above the ground surface.
- Impacts of the four agricultural reuse facilities will be minor and permanent. These facilities will each be comprised of large acreages (totaling 26,700 acres) of farmland underlain by the system of tile drains delivering drainage from upland fields. Above ground level, these facilities will consist of cropland planted with salt-tolerant crops. Other than a potential

permanent change in the type of crop planted on these acres, no changes to the visual character of these sites are anticipated.

- The impact caused by construction and operation of the RO treatment plant adjacent to the Northerly Area reuse facility would be moderate and permanent. The RO treatment plant may be visible from surrounding residences and local roads and, depending on its height and bulk, may alter the overall visual character of the location somewhat. The impact is expected to be moderate only because other industrial facilities are likely associated with existing agriculture already located within the general vicinity.
- Impacts associated with installation of the drainwater conveyance system connecting the four reuse facilities with the two regional treatment and disposal facilities are likely to be moderate and permanent. Four pumping plants (one adjacent to each reuse facility), each covering approximately 2 acres, will be constructed to convey drainwater from the reuse facilities upgradient to the regional treatment and disposal facilities. A network of buried 42-inch PVC pipelines (totaling 65 miles) would be installed to convey drainwater from the pumping plants to the treatment and disposal facilities. A part of this network would also convey RO concentrate from the Northerly Area RO treatment plant to the northern treatment and disposal facility. Impacts associated with the pipeline network would be temporary during construction only. The four pumping plants, however, may be visible from surrounding residences and local roads and, depending on their height and bulk, may alter the overall visual character of each location somewhat. Their impact is expected to be moderate only because other industrial facilities are likely associated with existing agriculture already located within the general vicinity of each site.
- Impacts associated with the two regional treatment and disposal facilities would likely be moderate and permanent. These facilities would consist of biological treatment reactors for selenium removal (160 acres) and evaporation ponds to reduce the reused and treated drainwater to a dry salt. The dry salt would be buried in place at an adjacent disposal area. The evaporation ponds would cover a total of 5,063 acres. Impacts would be permanent as each component would be visible from ground-level vantage points surrounding the sites. The evaporation ponds, treatment reactors, and salt disposal sites may be visible from nearby residences and local farm roads and, depending on their height and bulk, may alter the overall visual character of each location somewhat. Their impact is expected to be moderate only because other industrial facilities are likely associated with existing agriculture and other evaporation ponds already located within the general vicinity of each site.
- Impacts associated with the two mitigation wetland complexes anticipated to be constructed as part of this alternative would likely be minor and permanent. The mitigation wetlands are expected to be located in proximity to the two regional treatment and disposal facilities and are planned at 3,200 to 6,400 acres, depending on mitigation requirements negotiated with the U.S. Fish and Wildlife Service. Impacts would be permanent, as each wetland complex would be visible from ground-level vantage points surrounding the sites. Depending on existing land uses in and surrounding these locations, the wetlands may alter the overall visual character of each location somewhat. Natural wetlands do not currently exist in either area, but are located along Fresno Slough a few miles to the northeast of each site. Impacts are expected to be minor only because visibility would be limited to immediately adjacent vantage points and wetlands are located within the general vicinity of each site. In addition,

depending on existing land uses at each site, the change to a wetland use for the purpose of providing wildlife habitat may be considered to be a positive visual alteration.

This alternative would be generally consistent with the overall visual character of the San Luis Unit and would produce permanent impacts at only a few specific locations. The construction period is estimated at more than 4 years, though individual facilities causing temporary visual impacts would be built over a shorter time frame (varies by facility).

The potential visual impacts generated by implementation of this alternative will need to be evaluated against the visual element of the general plans for Merced, Fresno, and Kings counties and the cities of Firebaugh and Mendota. Designated California Scenic Highways within the general vicinity of the San Luis Unit include Interstate 5, which is located between 8 and 10 miles west of the facility locations and State Highway 152, which passes within 10 miles north of the Northerly Area reuse facility location. Given the flat topography of the area and the distance of project facilities from each corridor, visual impacts to motorists along these routes will likely be nonexistent.